

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

To: The Commission	)	
In the Matter of	)	
	)	ET Docket No. 02-08
Reallocation of the 216-220 MHz,	)	RM-9267
1390-1369 MHz, 1427-1429 MHz	)	RM-9692
1429-1432 MHz, 1432-1435 MHz,	)	RM-9797
1670-1675 MHz,	)	RM-9854
and 2385-2390 MHz	)	
Government Transfer Bands	)	

**Comments of InsideTrax™**

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## **SUMMARY**

InsideTrax™ files these comments in support of a number of the proposals and positions tentatively adopted by the Commission in its Notice of Proposed Rule Making regarding the service and auctions rules governing potential users and bidders for newly reallocated spectrum.

Specifically, InsideTrax™ supports the Commission's positions with respect to the 1670-1675 MHz band in that there should be a nationwide allocation of that band, licenses should be for a term of ten years and that the technical rules for the 1670-1675 should be as flexible as possible while protecting the incumbent federal operations.

Finally, InsideTrax™ reminds the Commission of the critical importance of considering public interest externalities that are not reflected by the market, and asks it to adopt public safety bidding credits to ensure that the spectrum be put to work for the public interest.

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**Comments of InsideTrax™**

**I. Introduction**

InsideTrax (“InsideTrax™”)<sup>1</sup> by counsel and pursuant to Section 1.415 of the Commission's Rules, hereby submits its comments in the above captioned rule making proceeding.<sup>2</sup> Since its inception, InsideTrax™ participated in this proceeding and its predecessors, seeking to highlight the importance of many issues in the reallocation of a series of bands of electromagnetic spectrum made available by the Federal Government pursuant to the Omnibus Budget Reconciliation Act of 1993<sup>3</sup> and Title III of the Balanced Budget Act of 1997<sup>4</sup>, and with the intent to operate a public-safety oriented personal location and monitoring service (“PLMS”) in a 5 MHz band of the reallocated spectrum.

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<sup>1</sup> Formerly MicroTrax™

<sup>2</sup> *Reallocation of the 216-220 MHz, 1390-1369 MHz, 1427-1429 MHz 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, WT Docket No. 02-08, Notice of Proposed Rule Making, FCC 02-15 (released February 6, 2002) (“NPRM”).

<sup>3</sup> Pub. L. 103-66, 107 Stat. 312 (1993).

<sup>4</sup> Pub. L. 105-33, 111 Stat. 251 (1997).

As stated in its previously filed petition and comments, InsideTrax™ believes strongly that the rapid deployment of new services in the spectrum that is the subject of this rulemaking is in the public interest. In support thereof, the following is respectfully submitted:

## **II. Licensing Plan**

The Commission's NPRM raised a number of issues regarding the nature of the licenses that would be granted to the winning bidders of any auction for the reallocated spectrum. As explained below, InsideTrax™ strongly supports the Commission's move toward licensing the 1670-1675 MHz band on a nationwide basis. InsideTrax™ also supports the Commission's initial proposal to grant licenses for terms of 10 years with a renewal expectancy.<sup>5</sup> In addition, InsideTrax™ generally supports a framework of rules that would allow spectrum to be partitioned and aggregated.<sup>6</sup>

### **A. Rules Flexibility**

The Commission also used the NPRM to raise the question of whether it should place the reallocated spectrum under the general framework of the Wireless Communications Service (Part 27) or under the framework of the Terrestrial Microwave (Part 101).<sup>7</sup> InsideTrax™ believes that the Commission's proposal to apply the framework of Part 27 would provide an appropriate amount of flexibility to licensees in that the technology-neutral approach of the Wireless Communications Services rules provides the opportunity for a range of new and innovative technologies to use the reallocated spectrum.

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<sup>5</sup> See NPRM at paras 16-20 and 86.

<sup>6</sup> See NPRM at para 89.

<sup>7</sup> See NPRM at para 77.

**B. Adoption of National Licensing for the Full 5 MHz Block Between 1670-1675 MHz Is Essential to Maximizing the Benefit to the Public**

In the NPRM, the Commission tentatively concluded that the 1670-1675 MHz spectrum band should be allocated on a nationwide basis, a request originally made by InsideTrax™ and many other parties to this proceeding.<sup>8</sup> InsideTrax™ wholeheartedly and enthusiastically joins the Commission and these parties in supporting nationwide licensing of the 1670-1675 MHz band. Such an approach is particularly important with regard to ArrayComm's, AeroAstro's, and InsideTrax™'s intended applications for the band, all of which would operate most effectively if the users of such services are not restricted to certain markets or parts of the country by a patchwork allocation of spectrum. In addition, a national licensing scheme avoids many problems, including uncertain interference hazards, while retaining maximum flexibility for use of the band.<sup>9</sup> In short, InsideTrax™ strongly believes that a nationwide allocation at 1670-1675 MHz (as well as the other spectrum in this docket) is best suited to maximizing public welfare and service efficiencies.

Furthermore, InsideTrax™ strongly supports the Commission's tentative conclusion that the 1670-1675 MHz band should be auctioned as a single 5 MHz block.<sup>10</sup> As noted by the Commission, this approach will reduce the likelihood of interference problems that could arise were the band to be auctioned as two 2.5 MHz wide blocks instead of a single 5 MHz block. In addition, the fact that there are at least three active and interested parties who will likely participate in the auction for this 5 MHz of spectrum- but who would likely *not* participate

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<sup>8</sup> See NPRM at para. 33; *see also* Comments of ArrayComm, Inc., at 50, Comments of AeroAstro, Inc., at 7; Letter from American Association of People with Disabilities, at 1.

<sup>9</sup> InsideTrax™ again urges the Commission to consider carefully the points set forth in "Economic Need for a National License in the 1670-75 MHz Band" which was included as an appendix to Arraycom's previously filed comments.

<sup>10</sup> See NPRM at para. 35.

should less than 5 MHz be available- should serve to assuage the competitive concerns raised by the Commission. As noted by the Commission, the full 5 MHz block is the *minimum* necessary bandwidth for the present prospective service providers to provide innovative and robust services.<sup>12</sup>

**C. Ten Year License Terms with a Renewal Expectancy are Appropriate**

InsideTrax™ supports the Commission’s proposal for 10 year license terms with renewal expectancies similar to those currently in place for cellular and PCS licensees.<sup>13</sup> Such a term will provide potential licensees with sufficient incentive to invest in new technology and infrastructure while affording the time necessary to recover on that investment.

**III. Auctions and the Public Interest**

**A. Public Safety Bidding Credits Account for Factors Crucial to Serving the Public Interest**

The Commission has acknowledged the importance of the public interest among the factors the Commission should weigh as it considers how it will reallocate spectrum. Once again, InsideTrax™ emphasizes the fact that the Commission enjoys broad discretion in its use of auctions to allocate spectrum in the public interest, and is not simply bound to the goal of securing the highest bid. Section 309(j)(6)(E) directs the Commission to use “engineering solutions, negotiations and the like so as to avoid the mutual exclusivity which is a condition precedent to any spectrum auction under Section 309(j).”<sup>14</sup> In short, both reasoned economic analysis and the requirement that spectrum allocation serve the public interest mandate full

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<sup>11</sup> See NPRM at para. 74.

<sup>12</sup> See NPRM at para. 74.

<sup>13</sup> See NPRM at para. 86.

<sup>14</sup> See Comments of Electronic Tracking Service, LLC, at 11, filed March 8, 2001.

consideration of the economic welfare and public benefits (and costs) associated with any allocation by auction.

At paragraph 151 of the NPRM, the Commission announced that it was open to the possibility of instituting a bidding credit for those parties who proposed uses of the spectrum that would enhance public safety. InsideTrax™ believes that by adopting such a credit, the spectrum assignment policies of the Commission will be enhanced. The axiom that the party willing to pay the most money for the spectrum wins would be tempered with the principle that the party most willing to advance the public interest by providing a (perhaps less profitable) public-safety service also stands a chance. In this way, the Commission may maximize the public benefits from use of the scarce spectrum in this band while still using the auction licensing mechanism.

Several external benefits are created by public safety applications – benefits that would not be otherwise captured in auctions. It is noteworthy that public safety application external benefits are very similar to those used to rationalize special allocations for public safety and emergency services in the public and private spectrum allocation and assignment functions of both NTIA and the FCC referred to above. Public safety applications—such as the personal location and monitoring services (PLMS) InsideTrax™ intends to offer—would improve the quality, make more efficient and reduce the costs of assorted law enforcement functions and efforts. For example, the cost to society associated with mobilizing a large effort to find missing persons and stolen property alone, are enormous and can be substantially reduced by a well-deployed service.<sup>15</sup> Those benefits flow only in part to subscribers, but in large measure to non-subscribers and to society as a whole.

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<sup>15</sup> This is but one example of lifesaving benefits a PLMS can provide. For further examples, see previously filed comments of MicroTrax™.



The value of a public-safety bidding credit to be used in auctions of this band is that it will account for the presence of very substantial externalities generated by such public-safety services – external benefits accruing to society and the economy that are not likely to be recognized or captured by private parties and reflected in their valuations and bids. The efficiency and public interest implications for auctions presented by the presence of public benefit externalities are well known and recognized by the Commission.<sup>16</sup> Without the bidding credits to account for the presence of substantial non-economic public benefits in this instance, the auction may well lead to inefficient allocation of scarce spectrum. By using bidding credits to account for the presence of significant external benefits, the winning bidder may put the spectrum to use in important public-safety applications that may well have otherwise been displaced by more lucrative- but less important- applications.

**B. Both Commercial and Non-Commercial Services Focusing Primarily on the Physical Location and Status of Individuals or Property Should Be Eligible for the Bidding Credits**

InsideTrax™ proposes that the Commission adopt an auction-bidding credit for bidders who certify to the Commission that they will use the spectrum in a manner that would benefit the public safety and render assistance to tax supported public service institutions such as police and fire departments.

InsideTrax™ offers a definition of eligibility that is modeled on Section 337(f)(1), which presently defines “public safety services” for the purposes of Balanced Budget Act auctions.<sup>17</sup>

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<sup>16</sup> See, e.g., the discussion at paragraph 11 of *Principles for Reallocation of Spectrum to Encourage the Development of Telecommunication Technology in the New Millennium*, 14 FCC Rcd 19868 (1999).

<sup>17</sup> See In the Matter of Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, 15 FCC Rcd 22709, para. 16 (2000) (“Section 337(f)(1) provides:

Specifically, InsideTrax would require that eligible entities certify that *the sole or principle purpose of the services it intends to offer is to protect the safety of life, health, or property, and that its service will assist public officers in their missions to carry out these same functions.* Such a requirement does not exclude the services from being offered on a commercial basis. Should an auction-winning entity that used the public-safety bidding entity later fail to qualify for this credit, it can be required to reimburse the Commission under the existing unjust enrichment policies.<sup>18</sup>

In the NPRM, the Commission also asked for comments on the proposed public-safety bidding credit in the context of Section 309(j)(2) of the United States Code, which exempts public safety radio service licensees—typically state or local government fire and police departments—from competitive bidding.<sup>19</sup> While the aim of Section 309 is clearly to utilize the marketplace as an efficient means of allocating spectrum, the Commission should not take the express exemptions of Section 309(j)(2) as the only means by which it may recognize the substantial externalities associated with public-safety applications. The public-safety bidding

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*The term “public safety services” means services—*

*(A) the sole or principle purpose of which is to protect the safety of life, health, or property;*

*(B) that are provided—*

*(i) by State or local government entities; or*

*(ii) by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services; and*

*(C) that are not made commercially available to the public by the provider.”)*

<sup>18</sup> See §1.2111; see also §27.15(c)(1)(2)

<sup>19</sup> See Section 309(j)(2), which provides, in part, that:

*“The competitive bidding authority granted by this subsection shall not apply to licenses or construction permits issued by the Commission -*

*(A) for public safety radio services, including private internal radio services used by State and local governments and non-government entities and including emergency road services provided by not-for-profit organizations, that -*

*(i) are used to protect the safety of life, health, or property; and*

*(ii) are not made commercially available to the public;”*

credit proposed by InsideTrax™ is clearly complementary to the purpose of Section 309(j)(2), which- like the bidding credit- is based on the principle that important public safety needs are not necessarily met by the operation of the pure marketplace. Similarly, the operations of the public-safety service will complimentary to the purposes of police and fire departments, who need not be the actual licensees of these services to benefit from them.

In short, InsideTrax™ is simply proposing that qualifying organizations receive an auction bidding credit similar in scope to what was provided to small business in the PCS auctions. The Commission at that time recognized that there was public value and an abiding overriding public interest in assuring that some firms and uses gained access to the spectrum – firms and uses that, but for the special consideration, would not likely be realized. As noted earlier, the Commission has previously recognized and acted on the principle we assert here – that the presence of externalities warrants special auction provisions. Thus, we are not proposing that the Commission act on a new principle when asking that it adopt a bidding credit for firms proposing use of spectrum with probable, large public safety externalities – but rather for on modest extension of an existing one.

#### **IV. 1670-1675 MHz Band Technical Issues**

InsideTrax™ limits its comments here to those directly affecting the 1670-1675 MHz band. Because of the unusually short comment period allowed by the NPRM, InsideTrax™ has not been able to examine some of the proposed technical standards in enough detail to confidently support the Commission's proposals. As a result, InsideTrax™ reasserts the viability of its own scheme and now submits that its earlier proposals regarding out of band emissions and power limits should be adopted, while intending to provide additional responsive analysis in its later filed reply comments.

## A. Out of Band Interference Reduction

InsideTrax™ believes it is important to provide a standard that will allow for good neighbors between the new services that will occupy the spectrum and their government neighbors and, just as importantly, between the new civilian, non-government users themselves. For this purpose, InsideTrax™ reiterates its recommendation for an adjacent band interference standard on any frequency outside of the authorized bandwidth of  $55+10\log(P)$  dB, where (P) is the highest emission in watts of the transmitter inside the authorized bandwidth.

To properly measure the out of band emissions, the resolution bandwidth of the instrumentation used to measure power should be 100 kHz, except that a minimum spectrum analyzer resolution bandwidth of 300 Hz should be used for measurement of center frequencies within 1 MHz of the edge of the authorized sub-band. If a video filter is used, its bandwidth should not be less than the resolution bandwidth. Emission power should be measured in peak values.

InsideTrax™ also proposes that the Commission adopt a *peak* power limit of 4 watts in the 1670-1675 MHz band. Power should be restricted to a maximum of 0.25 watts *average power* limit over a 60-second time interval. Using an average power standard would protect a situation a number of mobile units might congregate such that their combined emissions would exceed the permissible out-of-band limit. Thus, over a 1-minute interval, the averaged transmitted power from any one mobile unit would be only 1/16 the peak power limit of 4 watts. Such a standard allows for maximum engineering efficiency and reuse potential.

**B. Protection to Radioastronomy Operations, Wallop's Island, VA, Fairbanks, AK, and Greenbelt, MD Facilities**

InsideTrax believes that the technical rules outlined above will adequately protect the incumbent facilities about which the Commission has requested comments. The rules will result in private operations that are compatible with the protection requirements for in-band meteorological satellite earth station sites such as Wallop's Island, Virginia and Fairbanks, Alaska.<sup>20</sup> The proposed technical standards also require that operations would be sufficiently low in power that all likelihood of interference to radio astronomy operations in the subjacent 1660-1670 MHz band would be minimized.<sup>21</sup>

The Commission has also requested comments on the matter of how licensees in the 1670-1675 MHz band should coordinate with the incumbent government users in Greenbelt, Maryland.<sup>22</sup> InsideTrax™ generally supports the Commission's proposed coordination and notification procedures regarding operation in the vicinity of the federal facilities at Greenbelt. However, InsideTrax™ does not believe that the proposed 65 km radius of protection that the National Telecommunication and Information Administration asserts is required by the facilities is necessary. Instead, InsideTrax™' reaction to NTIA's proposal is that the radius of protection should take into account the nature of the transmitters, rather than setting a single limit for all in-band operations. Sixty five kilometers may be appropriate for a tower-mounted transmitter operating continuously at relatively high power (e.g., 100 watts). However, 16 kilometers may be more appropriate for low-power (less than 1 watt), low duty-cycle devices. Thus, InsideTrax™ urges the Commission to carefully craft rules that provide these facilities with protection from interference without being unnecessarily restrictive to low power devices.

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<sup>20</sup> See NPRM at para 122.

<sup>21</sup> See InsideTrax Reply Comments at 13.

<sup>22</sup> See NPRM at paras. 130-135.

## **V. Conclusion**

InsideTrax<sup>TM</sup> endorses service and technical rules that will allow a broad range of potential licensees to provide valuable service to the public in the 1670-1675 MHz band. There should be a nationwide allocation of that band, licenses should be for a term of ten years, and the technical rules should be as flexible as possible while protecting incumbent federal operations.

Most importantly, however, InsideTrax<sup>TM</sup> asks the Commission exercise its statutory responsibility to allocate spectrum in the public interest and make special provision to see that these benefits are captured in its spectrum management processes. InsideTrax<sup>TM</sup> believes that the presence of externalities and the broader public interest case for public-safety bidding credits has been clearly demonstrated. The Commission should adopt such credits because they will serve the public interest for the many reasons already stated in these comments.

In sum, the Commission must adopt public-safety bidding credits as a means of factoring in critical external values not inherently recognized in strict cash bidding. By doing so, the Commission may ensure that the public interest is truly served in this reallocation proceeding.

Respectfully submitted,

INSIDETRAX™

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